

STN

HCAPLUS, USPAT, JAPIO, INSPEC

7/20/03

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(FILE 'HCAPLUS, USPATFULL, USPAT2, JAPIO, INSPEC' ENTERED AT 12:14:47 ON
22 JUL 2003)

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| | |
|----|---|
| L1 | 2067469 S (SUBSTRATE#) |
| L2 | 48735 S (ELIMINAT? OR EVACUAT? OR IRRADICAT?) (8A) (VACUUM OR VACUUM(6A |
| L3 | 2423659 S (ETCH? OR EXPOS? OR MASK?) |
| L4 | 47446 S (REACTIV? (8A) GAS?) |
| L5 | 103420 S (ADSORB?) (8A) (SURFACE#) |
| L6 | 5890 S (PLASMA (2W) GENERATOR#) |
| L7 | 445424 S (ION# AND ELECTRON#) |

=> s 11 and 12 and 13 and 14 and 15 and 16 and 17

L8 6 L1 AND L2 AND L3 AND L4 AND L5 AND L6 AND L7

=> d 18 1-6 abs,bib

L8 ANSWER 1 OF 6 USPATFULL on STN

AB Disclosed is a method for manufacturing a semiconductor device which efficiently carries out a process on a semiconductor **substrate**, such as dry **etching**, and cleaning for removing a foreign matter after the process. The method includes a step of removing a foreign matter by using both an electric action of a plasma generated by plasma generation means and a physical action caused by a frictional stress of a fast gas stream formed by a pad structure which is arranged close to a wafer surface.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AN 2002:178903 USPATFULL

TI Method for manufacturing semiconductor device

IN Yokogawa, Kenetsu, Tsurugashima, JAPAN

Momonoi, Yoshinori, Kohubunji, JAPAN

Tsujimoto, Kazunori, Higashiyamato, JAPAN

Tachi, Shinichi, Sayama, JAPAN

PA Hitachi, Ltd. (non-U.S. corporation)

PI US 2002094691 A1 20020718

AI US 2001-939770 A1 20010828 (9)

PRAI JP 2001-7158 20010116

DT Utility

FS APPLICATION

LREP Stanley P. Fisher, Reed Smith Hazel & Thomas LLP, Suite 1400, 3110 Fairview Park Drive, Falls Church, VA, 22042-4503

CLMN Number of Claims: 39

ECL Exemplary Claim: 1

DRWN 11 Drawing Page(s)

LN.CNT 1049

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L8 ANSWER 2 OF 6 USPATFULL on STN

AB A method of fabricating a semiconductor device includes providing a semiconductor **substrate**, forming an oxide layer in the **substrate**, and adding nitrogen atoms on top of the exposed surface of the oxide film to form a diffusion barrier.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AN 2002:41539 USPATFULL

TI Chemistry for boron diffusion barrier layer and method of application in semiconductor device fabrication

IN Mahawili, Imad, Grand Rapids, MI, UNITED STATES

PI US 2002023900 A1 20020228

AI US 2001-931595 A1 20010816 (9)

PRAI US 2000-226167P 20000818 (60)
DT Utility
FS APPLICATION
LREP VAN DYKE, GARDNER, LINN AND BURKHART, LLP, 2851 CHARLEVOIX DRIVE, S.E.,
P.O. BOX 888695, GRAND RAPIDS, MI, 49588-8695
CLMN Number of Claims: 71
ECL Exemplary Claim: 1
DRWN 6 Drawing Page(s)
LN.CNT 830

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L8 ANSWER 3 OF 6 USPATFULL on STN

AB Apparatus and methods are disclosed for utilizing a plasma cleaning operation of a CVD system incorporating cleaning process endpoint detection. In one embodiment, the cleaning process is performed at a constant exhaust capacity and the endpoint detection is in response to a specified rate of change of chamber pressure. In another embodiment, a servo-controlled exhaust system maintains a controlled chamber pressure and the endpoint detection is in response to a specified control signal. In a preferred embodiment, nitrogen trifluoride is converted into a plasma containing free fluorine radicals in a magnetron-powered remote microwave **plasma generator**. The remotely produced free fluorine radicals are used to remove silicon nitride deposits from a **substrate** processing chamber. The use of such a remote plasma system provides an efficient cleaning process that takes as little as half the time compared to similar *in situ* plasma cleaning processes. The incorporation of endpoint detection provides optimal cleaning time for the remote plasma cleaning process.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AN 2000-79437 USPATFULL
TI Method and apparatus for determining the endpoint in a plasma cleaning process
IN Subrahmanyam, Sudhakar, Sunnyvale, CA, United States
Tanaka, Tsutomu, Santa Clara, CA, United States
Kelkar, Mukul, San Jose, CA, United States
PA Applied Materials, Inc., Santa Clara, CA, United States (U.S.
corporation)

PI US 6079426 20000627
AI US 1997-887165 19970702 (8)

DT Utility
FS Granted
EXNAM Primary Examiner: Powell, William; Assistant Examiner: Goudreau, George
LREP Townsend & Townsend & Crew
CLMN Number of Claims: 29
ECL Exemplary Claim: 1
DRWN 8 Drawing Figure(s); 8 Drawing Page(s)
LN.CNT 860

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L8 ANSWER 4 OF 6 USPATFULL on STN

AB A plasma-enhanced vacuum drying method is disclosed. It is advantageously applied in plasma sterilization processes in particular, and represents a significant improvement for general evacuation drying methods. Articles to be sterilized are placed in a sealed chamber and the chamber is evacuated. A plasma of residual gas species is generated in the chamber during an initial evacuation step. This promotes drying of the articles and advantageously allows a desired pressure to be attained more quickly than without the plasma. Sterilizing gas is injected into the chamber, and a second plasma is generated to activate the sterilizing gas plasma, thereby sterilizing the articles in the chamber.

AN 2000:57315 USPATFULL
TI Plasma-enhanced vacuum drying
IN Spencer, Robert M., San Juan Capistrano, CA, United States
Addy, Tralance O., Cota de Caza, CA, United States
PA Ethicon, Inc., New Brunswick, NJ, United States (U.S. corporation)
PI US 6060019 20000509
AI US 1997-838759 19970409 (8)
RLI Continuation of Ser. No. US 1994-320932, filed on 11 Oct 1994, now
patented, Pat. No. US 5656238
DT Utility
FS Granted
EXNAM Primary Examiner: McKane, Elizabeth
LREP Knobbe, Martens, Olson & Bear, LLP
CLMN Number of Claims: 10
ECL Exemplary Claim: 1
DRWN 8 Drawing Figure(s); 8 Drawing Page(s)
LN.CNT 489

L8 ANSWER 5 OF 6 USPATFULL on STN

AB A plasma-enhanced vacuum drying method is disclosed. It is
advantageously applied in plasma sterilization processes in particular,
and represents a significant improvement for general evacuation drying
methods. Articles to be sterilized are placed in a sealed chamber and
the chamber is evacuated. A plasma of residual gas species is generated
in the chamber during an initial evacuation step. This promotes drying
of the articles and advantageously allows a desired pressure to be
attained more quickly than without the plasma. Sterilizing gas is
injected into the chamber, and a second plasma is generated to activate
the sterilizing gas plasma, thereby sterilizing the articles in the
chamber.

AN 97:70688 USPATFULL
TI Plasma-enhanced vacuum drying
IN Spencer, Robert M., San Juan Capistrano, CA, United States
Addy, Tralance O., Cota de Caza, CA, United States
PA Johnson & Johnson Medical, Inc., Irvine, CA, United States (U.S.
corporation)
PI US 5656238 19970812
AI US 1994-320932 19941011 (8)
DT Utility
FS Granted
EXNAM Primary Examiner: Bhat, Nina
LREP Knobbe Martens Olson & Bear, LLC
CLMN Number of Claims: 18
ECL Exemplary Claim: 1
DRWN 8 Drawing Figure(s); 8 Drawing Page(s)
LN.CNT 509

L8 ANSWER 6 OF 6 USPATFULL on STN

AB A process for forming an **etching** pattern, which includes
selectively irradiating a light to a clean surface of a material to be
worked by **etching** so as to form radicals from a photoradical
forming substance in an atmosphere of the substance, forming a modified
portion having an **etching** resistance at a photo-irradiated
portion of the surface, and then subjecting an unmodified portion of the
surface of the material to be worked to an **etching** treatment,
thereby forming an **etching** pattern corresponding to a pattern
formed by the irradiation.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AN 94:77418 USPATFULL
TI Pattern forming process and process for preparing semiconductor device
utilizing said pattern forming process

IN Yagi, Takayuki, Machida, Japan
Komatsu, Toshiyuki, Hiratsuka, Japan
Sato, Yasue, Kawasaki, Japan
Kawate, Shinichi, Machida, Japan
PA Canon Kabushiki Kaisha, Tokyo, Japan (non-U.S. corporation)
PI US 5344522 19940906
AI US 1993-13180 19930129 (8)
RLI Continuation of Ser. No. US 1991-696024, filed on 6 May 1991, now abandoned
PRAI JP 1990-117644 19900509
JP 1990-118675 19900510
JP 1990-158687 19900619
JP 1990-174443 19900703
JP 1990-308550 19901116
DT Utility
FS Granted
EXNAM Primary Examiner: Powell, William
LREP Fitzpatrick, Cella, Harper & Scinto
CLMN Number of Claims: 49
ECL Exemplary Claim: 1
DRWN 40 Drawing Figure(s); 14 Drawing Page(s)
LN.CNT 2013
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

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